WHAT IS CLAIMED IS:

1. A triple push pull optical tracking method comprising:

receiving a set of three reflectance values from three optical spots on a recording medium;

generating three S-curves by pair-wise subtraction of reflectance values;

generating a linear position estimate by processing the S-curves; and

serving a recording head to the recording medium.

2. The method of claim 1 wherein the three reflectance values are digitized.

3. The method of claim 1 wherein equal distances separate the three optical spots across a track.

4. The method of claim 1 wherein serving the recording head comprises comparing a desired position of the recording head to a measured position from the linear position estimate.

5. The method of claim 1 wherein the recording medium is a linear magnetic tape.

6. The method of claim 5 wherein the three optical spots result from servo tracks on a magnetic side of the linear magnetic tape.

7. The method of claim 5 wherein the three optical spots result from servo tracks on a non-magnetic side of the linear magnetic tape.

8. The method of claim 1 wherein the recording medium is an optical disk.

9. A triple push-pull system for generating a composite signal in a closed loop servo signal of a data recording system to drive a recording head to any given position within any given track comprising:

optical pickup means for generating three optical spots focused on a recording medium, the spots separated by equal distances across a track, the optical pickup means receiving a set of reflectances from the three spots;

media means for providing the servo tracks responsive to optical spot illumination;

electronic means for generating a set of three filtered signals from the three reflectances and generating a set of three S-curves by pair-wise subtraction of the filtered signals;

processing means to generate a composite servo position signal from the S-curves and filtered reflectances; and

servo means for driving the recording head to a desired position by comparing the desired position to a measured position from the composite servo position.

10. The system of claim 9 wherein the media means is a linear magnetic tape system.

11. The system of claim 10 wherein the servo tracks are provided on a magnetic side of a recording medium of the linear magnetic tape system.

12. The system of claim 10 wherein the servo tracks are provided on a non-magnetic side of a recording medium of the linear magnetic tape system.

13. The system of claim 9 wherein the optical spots are separated by one-third track pitch in a direction across the servo tracks.

14. The system of claim 10 wherein a servo track comprises a series of marks in a form of depressed pits on a back coating of the recording medium.

15. The system of claim 12 wherein a servo track comprises a series of marks in a form of depressed pits on a back coating of the recording medium.

16. The system of claim 9 wherein each reflectance value maximum amplitude is normalized to a constant value.

17. The system of claim 9 wherein processing means to generate a composite servo position signal from the S-curves and filtered reflectances comprise:

choosing the pair of reflectance values with the largest amplitude gradient; and

adjusting the chosen s-curve position estimate for the zone based on a slope and an offset.

18. The system of claim 9 wherein individual s-curve position estimates are blended together to generate a continuous position estimate as individual linear sections are traversed.

19. The system of claim 9 wherein the closed loop servo system comprises a digital processor, the digital processor used to perform the composite servo position calculations from the reflectance values, derive a position error signal based on the position estimate and a commanded position, compensate the error signal in such a way as to reduce the lateral tape motion, and command an actuator to follow the lateral tape motion.

20. A method of generating a composite signal in a closed loop servo signal of a data recording system to drive a recording head to any given position within any given track comprising:

generating three optical spots focused on a recording medium, the spots separated by equal distances across a track;

receiving a set of reflectances from the three spots;

generating a set of three filtered signals from the three reflectances;

generating a set of three S-curves by pairwise subtraction of the filtered signals;

generating a composite servo position signal from the S-curves and filtered reflectances; and

driving the recording head to a desired position by comparing the desired position to a measured position from the composite servo position.

21. The method of claim 20 wherein the recording medium is a linear magnetic tape system.

22. The method of claim 21 wherein servo tracks are provided on a magnetic side of the recording medium of the linear magnetic tape system.

23. The method of claim 21 wherein servo tracks are provided on a non-magnetic side of a recording medium of the linear magnetic tape system.

24. The method of claim 20 wherein the optical spots are separated by one-third track pitch in a direction across servo tracks.

25. The method of claim 20 wherein a servo track comprises a series of marks in a form of depressed pits on a back coating of the recording medium.

26. The method of claim 23 wherein a servo track comprises a series of marks in a form of depressed pits on a back coating of the recording medium.

27. The method of claim 20 wherein generating the set of three filtered signals comprises:

converting electronic current from the reflectances to voltages;

generating the S-curves; and

reducing noise in the S-curves.

28. The method of claim 20 wherein each reflectance value maximum amplitude is normalized to a constant value.

29. The method of claim 20 wherein generating a composite servo position signal from the S-curves and filtered reflectances comprise:

choosing the pair of reflectance values with the largest amplitude gradient; and

adjusting the chosen s-curve position estimate for the zone based on a slope and an offset.

30. The method of claim 20 wherein individual s-curve position estimates are blended together to generate a continuous position estimate as individual linear sections are traversed.

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